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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,232	11/18/2003	Charles Sumner	ABBLUM/266/US	6752

7590

11/01/2005

Alix, Yale & Ristas, LLP  
750 Main Street  
Hartford, CT 06103-2721

EXAMINER
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DANG, THUAN D

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/716,232

Applicant(s)

SUMNER, CHARLES

Examiner

Thuan D. Dang

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1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/20/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Oath/Declaration*

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:  
It does not include the notary's signature, or the notary's signature is in the wrong place.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over “hydrocarbon processing reference” (herein after “Ref”) in view of Ihm et al (4,839,329).

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Ref discloses on page 96 a process of production of ethylene by steam-cracking a hydrocarbon feedstock to produce a product containing hydrogen, methane, ethane, ethylene, C3 and heavier (see the left column of page 96).

Note that Ref discloses recycling ethane for cracking and hydrogenating the acetylene (see paragraph 4 of the left column on page 96).

Ref does not disclose that acetylene is hydrogenated to ethylene as recited in step (b) of claims 1 and 30. However, Ihm discloses that acetylene can be hydrogenated to ethylene (the abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ref process by hydrogenating acetylene to ethylene to increase the production of desired product.

Clearly, this part of the Ref discloses a part of claim 1 including steps (a), (b), and (c).

The left column of page 126 of Ref disclose ethylene is dimerized to produce butene. Butene is later reacted with ethylene to produce desired propylene after which is separated from others, namely C2 by-products and C4 by-products.

Clearly, this part of the Ref discloses a part of claim 1 including steps (d), (e), and (f).

It would have been obvious to one having ordinary skill in the art who wishes to produce propylene as desire produce at the time the invention was made to have modified the teaching of Ref by integrating the parts taught by Ref as discussed above to arrive at the applicants' claimed process.

Ref disclose C2 hydrocarbons are removed from the metathesis products.

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Ref does not disclose refluxing the C2 hydrocarbons. However, it is obvious to one having in the art to have modified the Ref process by refluxing this hydrocarbon stream to make the top of the distillation wet and to get a purer distillate (Google Search with terms “reflux” and “distillation”).

A recycling of streams to appropriate locations is obvious.

Ref does not disclose how much the content of ethane in the feed is. However, as disclosed by Ref, it is expected that using any hydrocarbon feed containing any amount of different hydrocarbon would yield similar results.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 571-272-1445. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuan D. Dang

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Primary Examiner  
Art Unit 1764

10716232.20051028

A handwritten signature in black ink, appearing to be 'H. L. S.', written in a cursive style.